

King County International Airport Drainage Basin #5

Source Control Report

Addendum 1 – Responses to 1/23/09 Ecology Comments

Ecology General Comments

- The biggest environmental issue with drainage Basin 5 is water discharge from the airport driving PCBs from a highly contaminated section of drainage, down stream and off site, into the Duwamish.
- The secondary environmental issue is that the stormwater system (or MS4) at airport Basin # 5 is itself contaminated with lower level PCBs. This implies an ongoing source of PCBs in Basin 5.
- The Basin 5 Source Control report leaves many unanswered questions about the County's source control and illicit discharge detection and elimination plans for Basin 5. Those unanswered questions are listed below.

Figure 2

Comment	Response
<p>At the bottom of the legend the following text appears: CB, PIPE, OR MH CONFIRMED DOES NOT EXIST COULD NOT FIND, UNABLE TO CONFIRM OR DENY EXISTENCE What does this mean? The text is confusing, and there are no key symbols associated with the text.</p>	<p>This legend label was an error and will be removed from Figure 1 and 2. The revised figures are provided in Attachment 1.</p>
<p>Trench drains and channel drains referenced in the text and on Figure 3 are not shown on Figure 2 to be part of the stormwater system/MS4. The purpose of these drains is to collect and convey stormwater runoff; as MS4 features, they must be fully included in the mapping and discussion of Basin 5 (particularly Chapter 5).</p>	<p>Figure 2 was revised to show drainage from the channel drains to the stormwater system. Lines depicting the stormwater lines have been drawn within the channel drains to show their connection to the stormwater system. The revised figure is provided in Attachment 1.</p>

Figure 3

Comment	Response
<p>There are two drainage channels connecting at their most down slope ends at points 1808 (No. 582) and 1810. The channels only appear in the aerial photo, and are not marked by map lines as part of the stormwater drainage system. KC is asked to mark these as drainage lines in that GIS cover; these are part of the MS4.</p>	<p>Figure 3 has been revised to show drainage from the channel drains to the stormwater system. Lines depicting the same color as the stormwater lines will be drawn within the channel drains to show their connection to the stormwater system. The revised figure is provided in Attachment 1.</p>
<p>It is not clear from the map or narrative whether in addition to draining the parking lot, these also drain runoff from the FAA tower and/or some other drainage further to the north. KC is asked to determine all stormwater contributions to these drainage channels and include that information in the report both by mapping (as noted above) and the narrative.</p>	<p>Six Channel Drains are located within Drainage Basin #5, which drain the parking areas northwest and south of the FAA Control Tower (Attachment 1 – Figure 2). Photos of these drains are provided in Attachment 2.</p> <p>Channel Drains No. 562-564 are located within the North Boeing Field (NBF) lease area (Photo 1 & 2) and Channel Drains No. 577 & 578, and No. 581 are located within Airport property (Photo 3 & 4). Stormwater from the parking areas are conveyed to the channel drains through the channel drain inlets (Photo 5). Stormwater is conveyed directly to catch basins located around the control tower parking area and the northeast portion of the Basin 5.</p> <p>From the channel drains, stormwater is conveyed southward to downstream catch basins located within the channel drains (Photo 6). Drainage from the NBF channel drains are conveyed southward through stormwater piping and intersects with drainage from the Airport channel drains at MH-2-E. Stormwater is discharged offsite in a westerly direction through MH-1-E.</p>

Need to know if "Trench 2" and "Trench 3" is just nomenclature for two sampling points on the same trench, or if these names represent two different trenches. Update mapping to clarify.	Trench 2 and 3 are labels used for sampling points and represent two different channel drains, No. 564 & 563, respectively. See Figure 3 in Attachment 1 .
Regarding point No. 560: this is at the northern end of the Drainage Basin #5 (DB5) delineation. How is this and the rest of the north end of DB5 hydraulically separated from land to the north of the boundary? Is there a berm, curb, or crown (with land to the north sloping downhill in that direction)? When did the northern system get plumbed to sanitary sewer?	<p>A crowned road with curbing separates Drainage Basin #5 from stormwater structures to the north. The stormwater system north of Basin 5 is collected by catch basins and a trench drain which gravity drains, at a southwesterly direction, to the pump station located at the southwest corner of the drainage system. The pump station pumps water to the King County sanitary sewer interceptor located along East Marginal Way.</p> <p>The Airport has requested information from Boeing on when the pump station had been constructed and when it had become operational. This information required additional research. The Airport will convey this information to Ecology as soon as it becomes available.</p>

Page 8: Chapter 3 – O&M Plan

Comment	Response
Paragraph about middle of page, starting, "Catch basin, wet well, and oil/water separator". PCBs appear in the channel drains, so why are they not cleaned as part of O&M? The Report does not evaluate existing PCB data such that it informs O&M practices and frequencies.	<p>PCBs that exceeded the MTCA Method A Standard were found at the North Boeing Field lease area, specifically Trench 2 (Channel Drain No. 564). Though channel drains at the Airport parking area were not sampled, catch basins (No. 579 & 580), located down-gradient of the channel drains, were sampled in 2000 and showed no exceedence to the standard.</p> <p>The Airport and Boeing will need to include the channel drain cleaning as part of the O&M program.</p>

Page 10: Chapter 4 – Monitoring Plan

Comment	Response
<p>Where are the SPU sediment traps located specifically? To fully describe the Basin's Monitoring Plan, the sediment trap locations need to be marked as points on maps (Figures 1 and 2).</p>	<p>One of the three SPU inline sediment traps is located at the Drainage Basin #5 discharge point and is marked on Figure 2 and 3. The other two traps are located at discharge points associated with Airport's offsite discharges to former Slip 5 and Slip 6 located south of Drainage Basin #5.</p>
<p>How does KC plan to use the data in general, and specifically with regard to source control?</p>	<p>From the offsite and Basin 5 PCB Data, the Airport believes that the source of the PCBs found at the Basin 5 discharge point (MH-1-E) originated from the downstream PCB contaminated stormwater pipe located at Jorgensen Forge. Based on the Tukwila PCB Investigation, PCB contaminated stormwater and sediments migrate to the Airport's Basin #5 via tidal fluctuation and backwater. The Airport is planning to investigate this further with additional monitoring including the installation of inline sediment traps and conducting stormwater monitoring. Also, since these sources are offsite, the Airport will continue to maintain its catch basins to ensure that offsite PCBs do not continue to contaminate Airport areas. Additional structures such as the channel drains will need to be included in the Airport's maintenance program.</p> <p>Low level PCBs were found in joint caulk and trench samples in the Boeing lease area. Should this be a significant source of recontamination of river sediments, it will be addressed possibly through the removal of the joint caulk material and additional catch basin/channel drain cleaning. This issue has been discussed with Boeing and will require additional discussions with the Ecology site manager on its significance to recontamination of EEA4.</p>

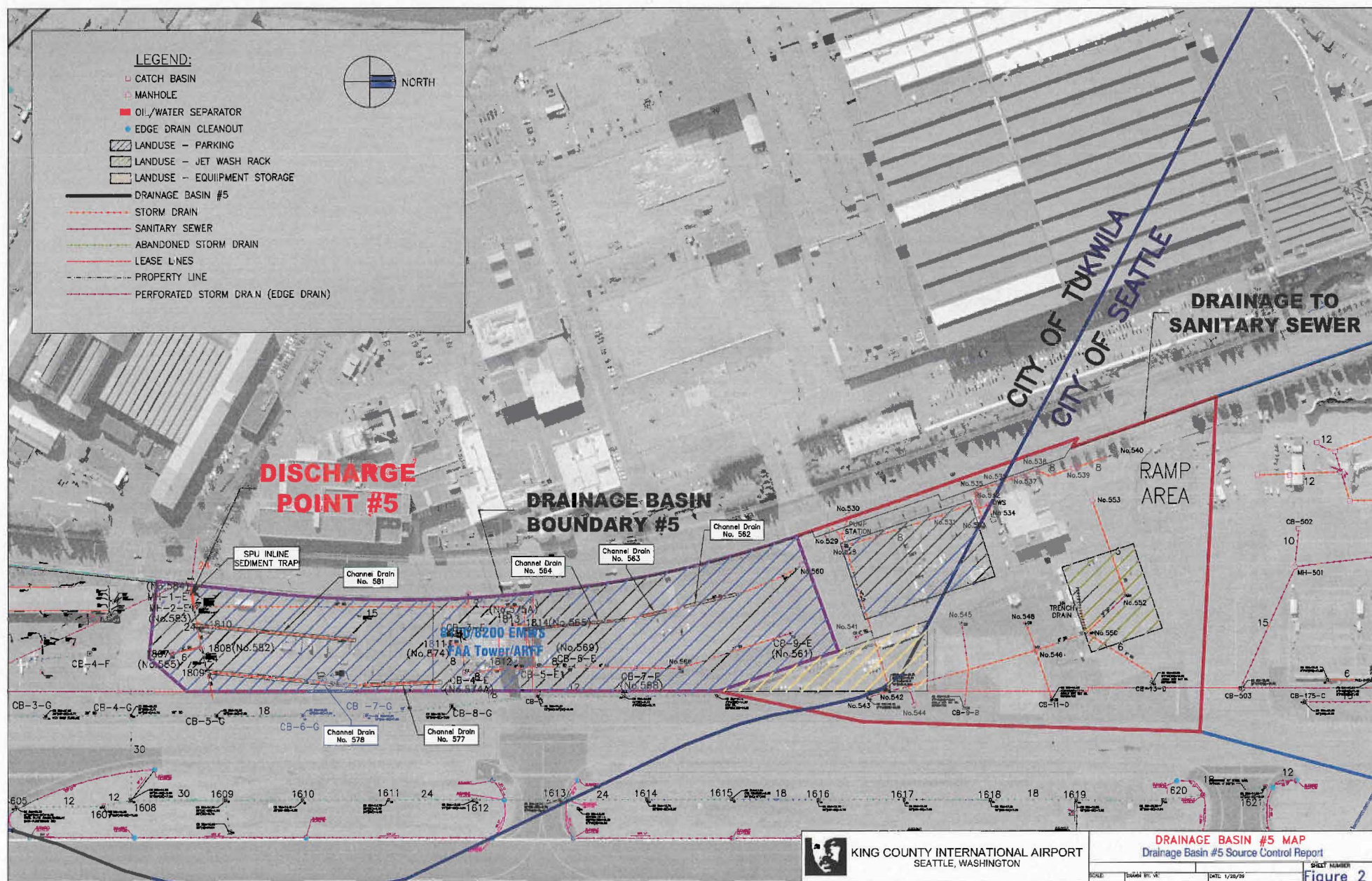
<p>Is there any nexus with the KC WTD CSO monitoring other than that program's willingness to collect some samples at Discharge Point 5 to contribute to the Drainage Basin # 5 (DB5) monitoring effort? What does DB5 have to do with the CSO study, since DB5 discharges directly to the Duwamish and not to the CSO system? Is the CSO sampling plan simply present to indicate how the Discharge Point 5 samples were collected? How many sampling events are planned at MH-1-E? Is this monitoring completed, underway or planned? The short paragraph in Chapter 4 is not sufficient to describe the monitoring plan for Basin 5.</p>	<p>The monitoring of MH-1-E was useful for the KCWTD program to obtain general reference stormwater PCB data for use in PCB Congener Analyses. The monitoring at Discharge Point 5 will contribute to the Basin 5 monitoring effort and will be performed in accordance with the CSO Sampling Plan. Per the plan, three sampling events are estimated.</p> <p>For Basin 5, stormwater monitoring at MH-1-E will provide additional information on whether elevated levels PCBs or other contaminants are migrating from the Airport to offsite areas or vice versa. No stormwater PCB data is currently available for this basin.</p>
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Page 11: Chapter 5 – Source Control

Comment	Response
<p>Chapter 5 falls short of providing any useful information about Basin 5 Source Control efforts. This discussion does not address any <u>special</u> source control actions taken or planned in Basin 5 to address the PCBs; general airport source control activities are described. The reference to a Source Control Status Report does not provide any additional information. The relevant section of that report reads as follows:</p> <p>4.4 Early Action Area 4 (Boeing Plant 2/Jorgensen Forge)</p> <p>EAA-4 and relevant adjacent and upland properties are shown in Figure 8. Action items for this source control area are listed in Table 7.</p> <p>Location RM 2.8-3.7 East Chemicals of Concern PCBs, phthalates, PAHs, metals Data Gaps Evaluation June 2007 SCAP December 2007 (Ecology 2007b)</p>	<p>Chapter 5 of the report shows existing general source control activities at the Airport. They are representative of a small drainage basin that has limited land use. Source control activities have been performed in accordance with the Early Action Area 4 Source Control Action Plan. The Source Control Status Report shows the current progress of those action items.</p> <p>Since the source of the PCBs found at the Drainage Basin 5 discharge point is believed to have originated from the offsite stormwater pipe, the Airport presently has no plans of directly removing this offsite source. This source of contamination should be addressed by an existing Agreed Order established by Jorgensen Forge and the Department of Ecology.</p> <p>The only source of low level PCBs were found at the North Boeing Field parking area. We will also be discussing this issue with the</p>

<u>No area-wide source control actions were completed during the April through August 2008 period.</u>	Ecology site manager to determine if the PCBs detected would be a significant source of recontamination of sediments at EEA4.
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Attachment 1



Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
1997	51	U
1998	31	U
1998(Dup)	36	U
2000	128	85

U=Undetected

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
2001	0.528	U

U=Undetected

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
2001	0.290	0.461

U=Undetected

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
1998	0.29	0.31
2000	0.76	0.21

U=Undetected

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
1998	0.45	0.40
2000	0.29	0.14

U=Undetected

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
2005	U	0.190

U=Undetected

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
2005	U	0.250

U=Undetected

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
2005	U	2.670

U=Undetected

Date	Amclor 1254 (mg/kg)	Amclor 1260 (mg/kg)
1998	0.093	U
2000 (5/21/00)	U	0.05
2000 (11/09/00)	2.200	1.700

U = Undetected

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
2005	U	0.414

U=U_{ndetected}

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
2005	U	0.529

U=Undetected

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
2005	U	1.690

U=Undetected

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
2005	U	0.143

U=Undetected

Date	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
2005	U	0.171

U=Undetected



Basin #5 PCB Data Map
Drainage Basin #5 Source Control Report

SCALE:		DRAWN BY: VN	DATE: 1/29/09	SHEET NUMBER
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Figure

Attachment 2

Drainage Basin #5 Channel Drain Photos



Photo 1. Looking South at Channel Drain No. 562 in NBF lease area.



Photo 3. Looking North at Channel Drains No. 578 (foreground) & No. 577 (not shown) in Airport property.



Photo 5. Channel drain inlet.



Photo 2. Looking South at Channel Drains No. 563 (foreground) and No. 564 (at red truck) in NBF lease area.



Photo 4. Looking North at Channel Drain No. 581 in Airport property.



Photo 6. Catch basins located downgradient and inside channel drains